

REMARKS

Claims 1-46 are pending in the application. Claims 18-19, 21-22, and 34 are cancelled hereby. Claims 17, 20, 33, 35-37, 43 and 46 are amended hereby. Claims 1-2, 4-5, 7-11, 14, 17-23, 26-29, 33-37, 41-43, and 46 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No 6,871,071 to Takao et al ("Takao") in view of U.S. Patent No 5,590,409 to Sawahashi et al. ("Sawahashi") and U.S. Patent No 6,167,240 to Carlsson et al ("Carlsson"). Claims 31, 38-40, and 44-45 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No 7,068,607 to Partain et al ("Partain"). Claim 32 is rejected under 35 U.S.C. §103(a) as being unpatentable over Partain in view of Carlsson. Applicant traverses and respectfully requests reconsideration and withdrawal of the rejections.

First, Applicant thanks the Examiner for indicating the allowability of claims 3, 6, 12-13, 15-16, 24-25, and 30.

The Examiner has objected to claim 37 for informalities, and has suggested deleting "radio base station" at line 7. Applicant thanks the Examiner, and has amended the claim to adopt the Examiner's suggestion. Applicant respectfully requests reconsideration and withdrawal of the objection.

Claims 1-2, 4-5, 7-11, 14, 17-23, 26-29, 33-37, 41-43, and 46 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takao in view of Sawahashi and further in view of Carlsson. Claims 1, 4, 7, 11, 14, 17, 20, 23, 26, 29, 33, 37, 41-43 and 46 are independent.

Turning first to independent claims 1, 4, 7, 11, 14, 37, and 41, independent claims 1 and 4 each recite "controlling transmission power of a common control signal, which governs a scope of a service area that a radio base station forms." Independent claim 7 recites "controllably changing transmission power of a common control signal, which governs a scope of service area that a radio base station forms." Independent claims 11, 14, 37, and 41 each recite "controlling [] transmission power of a common control signal, which governs a scope of service area that a radio base station forms." Neither Takao, Sawahashi, nor Carlsson, alone or in combination, disclose the above-

recited limitations. Accordingly, the Office Action fails to establish a *prima facie* case of obviousness. In particular, none of the cited references, even when combined, disclose controlling transmission power of a common control signal that governs a scope of service area that a radio base station forms.

At the top page 3, the Office Action states that Takao discloses controlling transmission power of a common control signal in a base station, citing col. 9, line 42- col. 10, line 55; col. 11, line 65; col. 19, line 8 - col. 20, line 45. Applicant respectfully disagrees. Takao does not disclose this claimed limitation. In the cited portions, Takao discloses handover techniques based in part on electric field intensity of a base station as measured by various mobile stations. Takao is completely silent with respect to controlling the power of a base station, much less the transmission of a common control signal, as is claimed.

Sawahashi does not cure Takao's deficiency. Sawahashi discloses methods to suppress interference by controlling the power of a mobile station.

Applicant admits that the prior art teaches suppressing interference by controlling the power in a mobile station. But Applicant is claiming "controlling transmission power of a common control signal **which governs a scope of service that a radio base station forms, to suppress interference.**" So even if Sawahashi and Takao are combined, the resulting combination does not control the transmission power in a base station.

Nothing in Carlsson cures the deficiency of the Takao and Sawahashi references. Carlsson, like Sawahashi, discloses controlling an **interfering mobile station** to deal with an interfering signal. As with Sawahashi, Carlson teaches to reduce the power of the **mobile station**. See col. 4, lines 1-45 of Carlsson, cited by the Office Action. Thus Carlsson, even when combined with Takao and Sawahashi, does not read on the present invention as recited in claims 1, 4, 7, 11, 14, 37 and 41.

Accordingly, Applicant respectfully submits that independent claims 1, 4, 7, 11, 14, 37 and 41, are presently in condition for allowance and urges reconsideration and withdrawal of the rejections thereto. As dependent claims 2, 5, and 8-10 depend from independent claims 1, 4, and 7, and as nothing in Takao, Sawahashi or Carlsson alone or in combination cure the deficiencies of these references as applied to the independent claims, Applicant urges that these claims in condition for allowance as well and request reconsideration and withdrawal of the rejections thereto.

Claim 42 recites a computer readable program that “controls the operation of a radio base station” that includes “the control step of responding to occurrence of interference between plural service areas and controlling transmission power, to suppress interference autonomously.” As explained with respect to claims 1, 4, 7, 11, 14, 37, and 41, Takao is silent as to controlling “the operation of a radio base station” by “controlling transmission power” to suppress interference “between plural service areas” provided by base stations. Rather, Takao teaches measuring the electric field intensity of a base station to determine whether a mobile station should be handed over. Quite simply, Takao has nothing to do with controlling transmission power for interference suppression as between plural service areas. Nothing in Sawahashi cures Takao’s deficiency, as both Sawahashi and Carlsson teach controlling power of a mobile station. Accordingly, Applicant respectfully submits that independent claim 42 is in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

Independent claims 17, 20, 43, and 46 each recite distributively controlling a load “based on [] the sum of sets of said link utilization information collected from [respective] radio terminals for each radio base station.” This limitation was previously found in dependent claims 19 and 22, which are cancelled hereby. Neither Takao, nor Sawahashi, nor Carlsson disclose this limitation. Indeed, in its group rejections of claims 17-19 and 20-22, the Office Action does not mention this limitation. See the Office Action at pages 13-17, especially pages 13 and 15.

At best, the Office Action makes reference to a power detector in col. 8, lines 1-31 of Sawahashi that detects the power level of a signal from a base station and “performs the calculations.” None of Sawahashi or Carlsson teach the sum of sets of link utilization information

collected from radio terminals for each radio base station, as required by claims 17, 20, 43, and 46. Accordingly, it is clear that neither Takao nor Sawahashi nor Carlsson disclose each and every limitation of independent claims 17, 20, 43, or 46. Accordingly, Applicant respectfully submits that each of these claims are in condition for allowance and urges reconsideration and withdrawal of the rejections thereto.

Independent claims 23 and 26 each recite “controlling transmission power of a radio base station based on said information of radio link qualities from plural radio terminals.” As described above with respect to independent claims 1, 4, 7, 11, 14, 37, and 41, none of Takao, Sawahashi or Carlsson teach controlling the transmission power of a base station as required by claims 23 and 26. Thus Applicant respectfully submits that independent claims 23 and 26 are presently in condition for allowance and urges reconsideration and withdrawal of the rejections thereto. As dependent claims 27-28 ultimately depend from independent claim 26, and as nothing in the cited references cure their deficiency as applied to these independent claims, Applicant respectfully submits that the dependent claims are in condition for allowance as well and urges reconsideration and withdrawal of the rejections thereto.

Independent claim 29 recites “receiving information of radio link qualities from plural radio terminals; and controllably changing a frequency used by a radio base station based on said information of radio link qualities from plural radio terminals.” First, the Office Action alleges Takeo teaches “controllably changing a frequency used by a radio base station.” Applicant respectfully disagrees. Rather, Takao discloses techniques for switching a mobile station from one base station to another base station (*i.e.*, handover). See, *inter alia*, col. 9, line 42-col. 10, line 55; col. 11, line 65, col. 19, line 42-col. 20 line 45; cited by the Office Action. Takao discloses handing over a mobile station, not **changing frequency in a base station**.

Moreover, the Office Action admits that Takao does not disclose controlling transmission frequency of a radio base station based on the information qualities of radio link qualities from plural radio terminals. The Office Action alleges Sawahashi and Carlsson disclose this limitation. As explained above with respect to claims 1, 4, 7, 11, 14, 37, and 41, both

Sawahashi and Carlsson teach controlling **power** of a **mobile station**, and hence are silent on controlling **frequency** in a **base station**. Accordingly, Applicant respectfully submits that claim 29 is presently in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

Regarding claims 33 and 35-36, independent claim 33 recites a radio terminal that includes “**means for measuring a radio link quality and then notifying a radio resource management apparatus of radio link quality information being the measurement result, the notifying means performing a notifying operation at predetermined notification intervals.**” The Office Action admits Takao does not disclose this limitation. Yet nothing in Sawahashi or Carlsson, including the Office Action’s citations and descriptions thereof show this limitation. To the contrary, as the Office Action shows, in the cited references the base station needs to request the information it receives from the mobile terminal or perform measurements itself. (See the Office Action on Sawahashi at page 23: “The base station measures a desired received power level, and calculates its signal to interference ratio;” on Carlsson at page 26: “The controlling arrangement includes a device for requesting identification of all mobile station in the neighborhood of the interfered base station.”) The references do not disclose any “notifying means performing a notifying operation at predetermined notification intervals” in the radio terminal. As none of the cited references, alone or in combination, disclose above-recited limitation, Applicant urges claim 33 is in condition for allowance and further urges reconsideration and withdrawal of the rejection thereto. As claims 35 and 36 depend from claim 33, and as nothing in the references cure their deficiency as applied to claim 33, Applicant respectfully submits that these claims are also presently in condition for allowance and urges reconsideration and withdrawal of the rejections thereto.

The Office Action rejects claims 31, 38-40, and 44-45 under 35 U.S.C. §102(e) as being anticipated by Partain. Each of the claims are independent. The claims recite “controllably changing a frequency used by a radio base station,” (claims 31, 40, 45) or “controlling transmission power of a base station,” (claim 39, 44); each claim recites control “based on information on radio link qualities notified from plural radio terminals.” Partain does not disclose all of these limitations.

First, as regards claims 31, 39-40, and 44-45, the Office Action admits that Partain's bandwidth broker uses the information it collects from load measurement proxies to process on-demand admission requests. See Partain, Abstract and col. 3, lines 45-65, cited by the Office Action. Partain's disclosure is silent on "controllably changing a frequency" or "controlling the power" of a base station, as required by these claims.

Moreover, claims 31, 38-40, and 44-45 each recite that control is "based on information on radio link qualities notified from plural radio terminals." As explained at col. 6, lines 1-33 of Partain, also cited by the Office Action, Partain's bandwidth broker client asks a bandwidth broker server whether a particular path is congested. The bandwidth broker server in turn collects responsive information from load measurement proxies located at various points in the network. As is clear in figure 3 of Partain, the load measurement proxies are either at the base station (RBS) or at a gateway (GM), not at the radio terminals. See also col. 7, lines 59-66 of Partain. Thus it is clear that any information used by Partain's bandwidth broker is notified from either the base station or a gateway, and is not therefore "based on information on radio link qualities **notified from plural radio terminals**," as required by independent claims 31, 38-40, and 44-45. Indeed, the Office Action admits as much at, *inter alia*, page 36 when it states that Partain "shows in figure 3, a bandwidth broker server that collects information from various **load measurement proxies** located at various points in the network."

As Partain does not disclose, *inter alia*, controllably changing a frequency used by a radio base station or controlling transmission power of a base station, "based on information on radio link qualities notified from plural radio terminals," as required by claims 31, 38-40, and 44-45, Applicant urges these claims are in condition for allowance and requests reconsideration and withdrawal of the rejections thereto.

The Office Action rejects claim 32 under 35 U.S.C. §103(a) as being unpatentable over Partain in view of Carlsson. Claim 32 depends from independent claim 31. Partain does not disclose each and every limitation of independent claim 31, as explained above. Carlsson does not cure the deficiency of the Partain reference as applied to independent claim 31. Accordingly,

Applicant respectfully submits that claim 32 is in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

No fee is believed to be due for this Amendment. Should any fees be required, please charge such fees to Deposit Account No. 50-2215.

Dated: July 18, 2007

Respectfully submitted,

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